

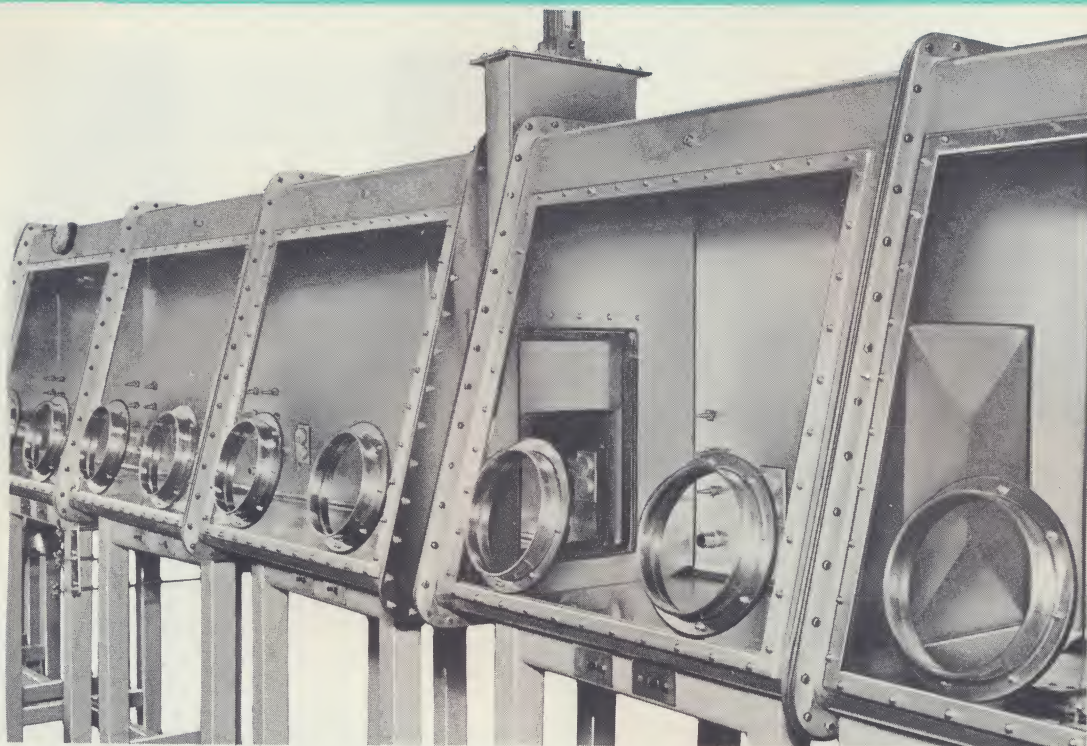


Fig. No. 1—Multiple assembly of Full-View Sloping Front Enclosures for the processing of radioactive materials. The air-operated door seals one section of the assembly from the other.

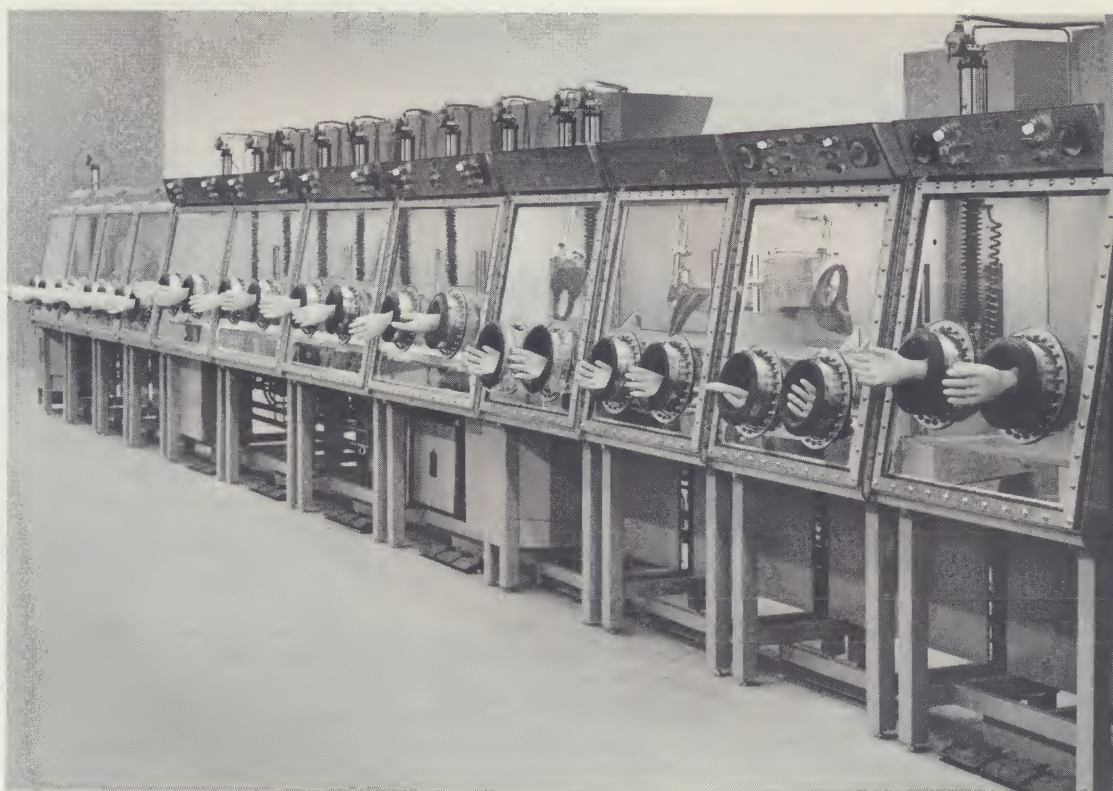


Fig. No. 2—Semiconductor manufacturing line of Full-View Sloping Front Enclosures with conveyors, gas bakeout ovens, water cooled heat sinks and air-operated internal oven doors and pass-through doors.

KEWAUNEE SCIENTIFIC EQUIPMENT — Adrian, Michigan



No. 2C2100 PLAIN END PANEL can be used at either end of Full-View Sloping Front Enclosures.



No. 2C2110 RIGHT SWINGING DOOR END PANEL



No. 2C2112 RIGHT SWINGING DOOR END PANEL

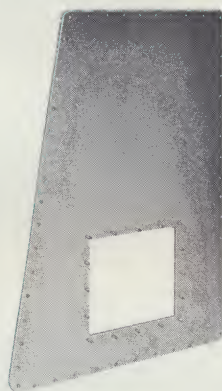
No. 2C2110 through No. 2C2113 SWINGING DOOR END PANELS are equipped with swinging doors that provide an air-tight seal. The doors close against gaskets and have quick-opening latches. Both the door hinges and latches are adjustable to compensate for gasket wear.

No. 2C2110 Right Swinging Door End Panel—7" x 9" door opening.

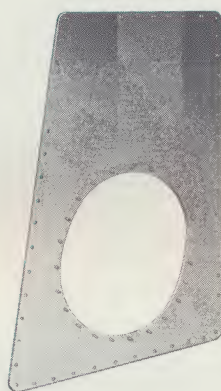
No. 2C2111 Left Swinging Door End Panel—7" x 9" door opening.

No. 2C2112 Right Swinging Door End Panel—12" x 12" door opening.

No. 2C2113 Left Swinging Door End Panel—12" x 12" door opening.



No. 2C2120 and No. 2C2122 RIGHT INTERCHANGE COMPARTMENT END PANELS



No. 2C2124 RIGHT INTERCHANGE COMPARTMENT END PANEL

No. 2C2120 through No. 2C2125 INTERCHANGE COMPARTMENT END PANELS are furnished with stud bolts, washers and cap nuts around the cutout to mount either the No. 2C1330, No. 2C1331 or No. 2C2200 Controlled Atmosphere Interchange Compartments. A double-contact, neoprene gasket to fit over the stud bolts around the cutout is included. Cutout size for No. 2C2120 and No. 2C2121 is 10 $\frac{3}{4}$ " L. x 10 $\frac{1}{4}$ " H. Cutout size for No. 2C2122 and No. 2C2123 is 15 $\frac{1}{4}$ " L. x 13 $\frac{1}{4}$ " H. Cutout size for No. 2C2124 and No. 2C2125 is 17" dia.

No. 2C2120 Right Interchange Compartment End Panel—for 7" x 9" Interchange.

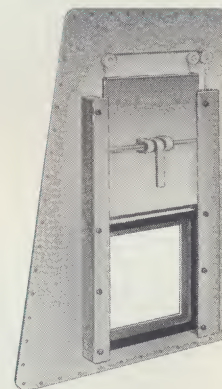
No. 2C2121 Left Interchange Compartment End Panel—for 7" x 9" Interchange.

No. 2C2122 Right Interchange Compartment End Panel—for 12" x 12" Interchange.

No. 2C2123 Left Interchange Compartment End Panel—for 12" x 12" Interchange.

No. 2C2124 Right Interchange Compartment End Panel—for 12" dia. Interchange.

No. 2C2125 Left Interchange Compartment End Panel—for 12" dia. Interchange.



No. 2C2141 LEFT COUNTERBALANCED DOOR END PANEL

No. 2C2140 and No. 2C2141 COUNTERBALANCED DOOR END PANELS are equipped with counterbalanced, vertical sliding doors. An easily operated, cam action latch is provided on the door to seal it tightly against a gasket in the down position. Door opening is 10" x 10".

No. 2C2140 Right Counterbalanced Door End Panel

No. 2C2141 Left Counterbalanced Door End Panel

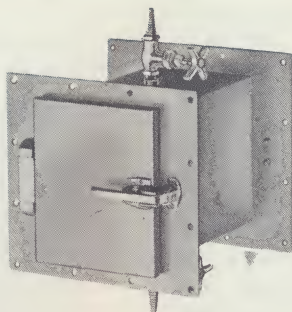
ACCESSORIES FOR FULL-VIEW SLOPING FRONT EN



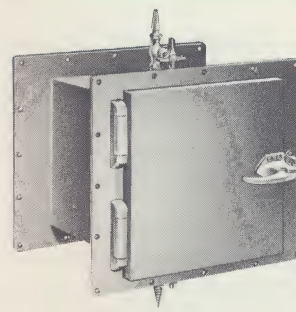
No. 2C2150 RIGHT TRANSFER END PANEL

No. 2C2150 and No. 2C2151 TRANSFER END PANELS are provided with approximately 12" dia. ports and covers for use in transferring material in or out of the enclosure. These end panels are designed primarily for the "bag out" technique using a heat sealed vinyl bag for effecting the transfer. Mounting dimensions of assembled port and cover are 15½" dia. x 7½" long.

No. 2C2150 Right Transfer End Panel
No. 2C2151 Left Transfer End Panel



No. 2C1330 CONTROLLED ATMOSPHERE INTERCHANGE COMPARTMENT

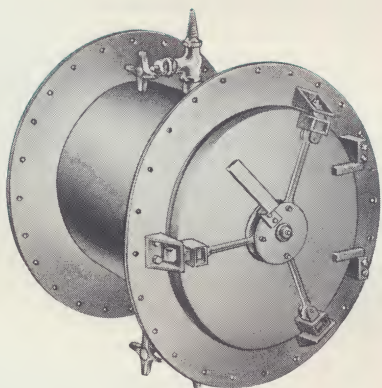


NO. 2C1331 CONTROLLED ATMOSPHERE INTERCHANGE COMPARTMENT

No. 2C1330 and No. 2C1331 CONTROLLED ATMOSPHERE INTERCHANGE COMPARTMENTS are specifically designed for controlled atmosphere exchange. The air-lock or isolation feature of these compartments is accomplished by an all-welded construction, door gaskets and doors on each end with quick-opening latches. Both the door hinges and latches are adjustable to compensate for gasket wear. They are capable of being slightly pressurized, or evacuated, and come complete with two integral valves for inlet and exhaust of purge gas, or attachment of vacuum pump. They can be evacuated within 10 minutes to less than 200 microns absolute pressure with a 5 CFM mechanical pump, and with more pumping to less than 50 microns with the addition of a 2" diffusion pump. No. 2C1330 is designed to bolt on to No. 2C2120 and No. 2C2121 End Panels, and No. 2C1331 bolts on to No. 2C2122 and No. 2C2123 End Panels.

No. 2C1330 Controlled Atmosphere Interchange Compartment—7" W. x 9" H. x 12" L. inside dimensions. Mounting dimensions are 12¾" W. x 12¼" H. x 14" L.

No. 2C1331 Controlled Atmosphere Interchange Compartment—12" W. x 12" H. x 12" L. inside dimensions. Mounting dimensions are 17¾" W. x 15¼" H. x 14" L.

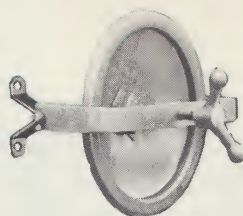


No. 2C2200 CONTROLLED ATMOSPHERE INTERCHANGE COMPARTMENT is specifically designed for controlled atmosphere exchange. The air-lock, or isolation feature, of this compartment is accomplished by an all-welded construction, "O" ring door gaskets and doors on each end with 3-point, positive cam acting, quick-opening latches. It is capable of being moderately pressurized, or evacuated, and comes complete with two integral valves for inlet and exhaust of purge gas, or attachment of vacuum pump. It is capable of being evacuated within 10 minutes to less than 10 microns with a 5 CFM mechanical pump, and with more pumping to 1 micron with the addition of a 2" diffusion pump. It is designed to bolt on to No. 2C2124 and No. 2C2125 End Panels. Inside dimensions are 12" dia. x 12" long. Mounting dimensions are approximately 19" O.D. flange x 15" long.



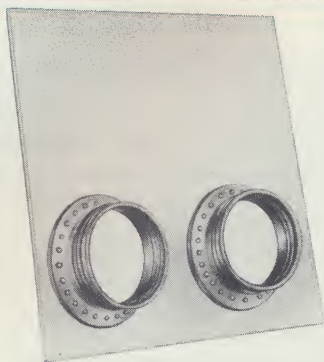
No. 2C1536 and No. 2C1537 PORT CLAMPS are adjustable stainless steel strap clamps for glove or transfer ports. By tightening these clamps over the gloves or vinyl bags and "O" ring retainers on the glove or transfer ports, a tight, leak-proof fit is assured.

No. 2C1536 Glove Port Clamp—for 8" dia. glove ports.
No. 2C1537 Port Clamp—for 12" dia. transfer ports.

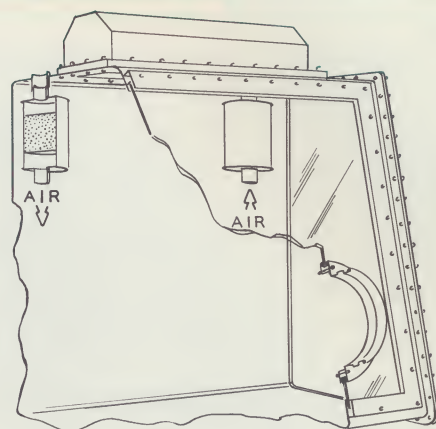


No. 2C2225 and No. 2C2226 PORT COVERS are designed to fit over glove or transfer ports, and can be tightened to make the ports leak tight.

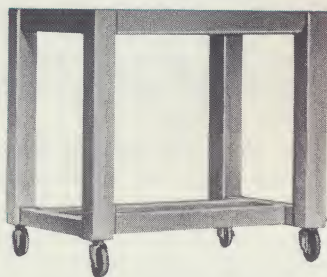
No. 2C2225 Glove Port Cover—for 8" dia. glove ports.
No. 2C2226 Port Cover—for 12" dia. transfer ports.



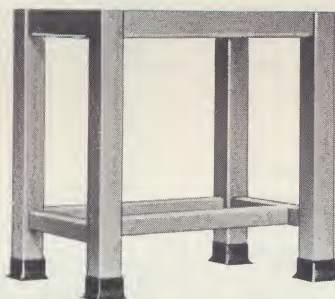
No. 2C2250 and No. 2C2251 VIEWING PANELS are furnished complete with two 8" I.D. stainless steel, gasketed glove ports mounted in the panels. Overall dimensions of the panels are 32" L. x 33½" H.
No. 2C2250 Viewing Panel—¾" thick clear Plexiglas.
No. 2C2251 Viewing Panel—¾" thick safety glass.



No. 2C2275 FILTER is enclosed in a metal case and utilizes type AAA fiberglass as a filtering medium, which provides a retention efficiency of 99.95% plus for sub-micron sized particles. It has a capacity of approximately 25 CFM at 1" Static Pressure. The filter has a 1½" O.D. inlet and outlet, with one end having an 1½" I.P.S. male thread. Manometer connections are provided at each end as a means of determining when filters require replacement. Overall dimensions are 6" dia. x approximately 11" L.



No. 2C250 MOBILE UNDERSTRUCTURE is an open-leg and apron base fabricated of heavy gauge cold-rolled steel. Rubber tired casters with brakes are provided on each leg for mobility. It has a No. 38 Beige, baked chemical resistant synthetic resin finish. Overall dimensions are 35" L. x 33½" H. x 23" W.



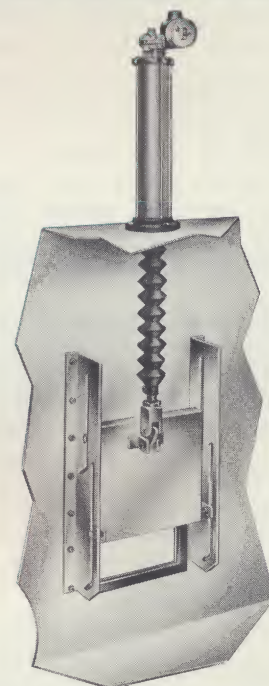
No. 2C280 STAND is an open-leg and apron base fabricated of heavy gauge cold rolled steel. Each leg is equipped with an adjusting bolt for leveling purposes and a rubber leg shoe. It has a No. 38 Beige, baked chemical resistant synthetic resin finish. Overall dimensions are 33¾" L. x 36" H. x 23" W.



No. 2C2300 ELECTRIC ASSEMBLY consists of an enclosed duplex 110 volt AC receptacle and a length of ½" O.D. pipe with the inlet having a ½" I.P.S. male thread. Overall length is approximately 30".

GLOVES—see page A-20 of KSE Enclosures catalog.

SERVICE FIXTURES AND ELECTRICAL FIXTURES—see the Kewaunee Section 1—Service Fixtures Catalog.



AIR OPERATED DOORS seal air-tight when closed and rise vertically, thus saving space inside the box that would be required for the swing of a hinged door. They can be mounted on the inside of an end panel or at the rear of the box for use as an interlock or oven closure. A plastic bellows prevents any contamination in the air cylinder from entering the box. Door speed is adjustable and a safety switch prevents accidental injury to hands as the door closes. Operation is by push button or foot switch as desired. Doors can be any size required, up to a maximum clear opening size of 15" x 15".

SCOPE

These specifications cover the general design, size, shape, construction, materials and performance test requirements of Full-View Sloping Front Enclosures.

GENERAL DESIGN

1. The boxes shall have a continuously sloped front (approximately 10° from the vertical) with the glove ports mounted in the viewing panel. Glove ports shall be spaced 17" center-to-center, with center line of ports approximately 10" above the work surface.
2. Longitudinal corners of the boxes shall have a ½" interior radius.
3. End panels and/or additional boxes in a multiple assembly shall mate with 1½" wide end flanges on the box shell.
4. Viewing and fluorescent light panels shall be mounted in a welded frame provided with clearance holes for hold down fastenings spaced on centers not to exceed 3½".
5. Weld studs that do not perforate the box shell shall be applied around the viewing and light panel openings, as well as around the opening in the interchange compartment end panels.
6. Gaskets for the viewing and fluorescent light panels and the glove port rings shall be channel shaped. A separate gasket effecting the viewing panel seal shall be a closed cell sponge contoured on one bearing surface to effect a compression type seal.
7. Supporting stand shall be the open-leg and apron type, and shall be fixed or movable as specified. Legs shall be 2½" square, 16 gauge, with the apron and spreaders suitably sized. Fixed stands shall contain an adjusting bolt in each leg for leveling purposes, and shall be equipped with rubber leg shoes. Movable stands shall be equipped with 3" dia. rubber tired casters with brakes on each leg. The stand shall be made of cold rolled steel, phosphate coated, and given a baked, chemical resistant synthetic resin finish.

MATERIALS

1. Box shell, end panels, framing around viewing and fluorescent light panels, glove ports and covers, all fittings welded to box, interchange compartments, studs, bolts, nuts, washers, welded pipe couplings and glove port clamps shall be type 304 stainless steel.
2. Viewing panel and fluorescent light panel shall be ¾" thick Plexiglas or safety glass as specified.
3. Gaskets shall be neoprene, molded Buna N or one-piece extruded sponge neoprene (depending upon usage) to effect a tight seal. Open corners will not be acceptable.
4. Gloves shall be milled neoprene complete with "O" ring retainers.
5. Hardware for interlock doors or hinged doors shall be adjustable, stainless steel or chrome plated brass.
6. Sleeve nuts shall be nickel plated steel.
7. Supporting stand shall be made of cold rolled steel.

DIMENSIONS

1. Inside dimensions of the 12 gauge box shall be 36¾" long x 36" high x 26" front-to-back.
2. Glove ports shall be 16 gauge, 8" I.D. with 11½" O.D. mounting flange, and two 8¾" O.D. beads; ¼-20 weld studs shall be located peripherally on 1½" maximum center-to-center spacing. Retaining rings shall be 16 gauge.
3. Inside dimensions of the interlock shall be 7" x 9" x 12" long, 12" x 12" x 12" long or 12" dia. x 12" long as specified. All interlocks shall be 12 gauge. Interlocks shall contain two ⅜" valves for inlet and exhaust of purge gas or attachment of vacuum pump.
4. Fluorescent light fixture shall be 24" long, 2-tube type.
5. Gloves shall be approximately 30" long x .015" thick.

SERVICE FACILITIES

1. Box shall contain, for filtering and exhaust purposes, two welded pipe couplings with 1½" I.P.S. female thread, located one each side at top rear of box.
2. Box shall contain, for electrical lead throughs, two welded pipe couplings with ½" I.P.S. female thread, located at top rear of box.
3. Box shall contain, for plumbing service fittings, two welded pipe couplings with ⅜" I.P.S. female thread, located at top rear of box.

STAINLESS STEEL FINISH

1. Interior and exterior of box and interlock shall have a No. 2B finish except exposed welds, which shall be ground and polished to a surface roughness less than 32 micro-inches RMS.
2. Glove port rings and covers shall have a polished satin finish.
3. All edges, both interior and exterior, shall have burrs and sharp edges removed.

WARRANTY

This equipment shall be warranted against defective material and workmanship for a period of one year from date of shipment when subjected to normal usage. Upon notification, and subject to inspection and verification at the factory, the defective parts shall be replaced or repaired without charge, f.o.b shipping point, when parts are returned prepaid to the factory. The warranty does not extend to expendable items such as filters, gloves and fluorescent light tubes.

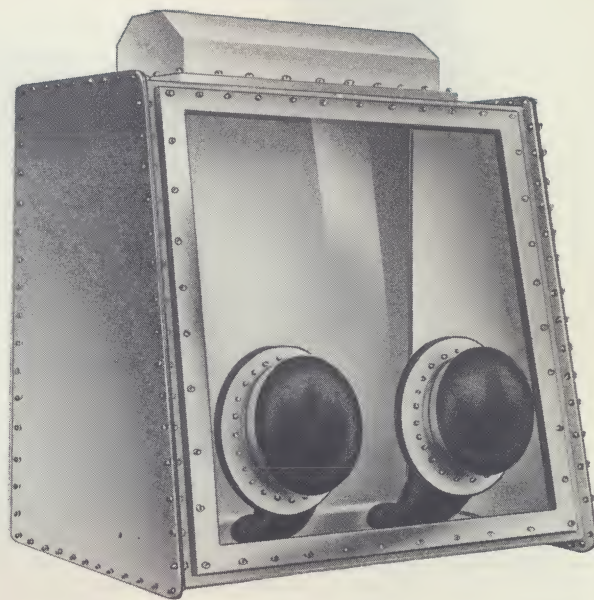
LEAK TEST CERTIFICATION

As an option at additional cost, these assemblies may be ordered helium mass spectrometer leak tested, and certified in writing to have no leaks exceeding 1×10^{-5} cc per second (less than 1 cc per day) at 2" water gauge pressure.

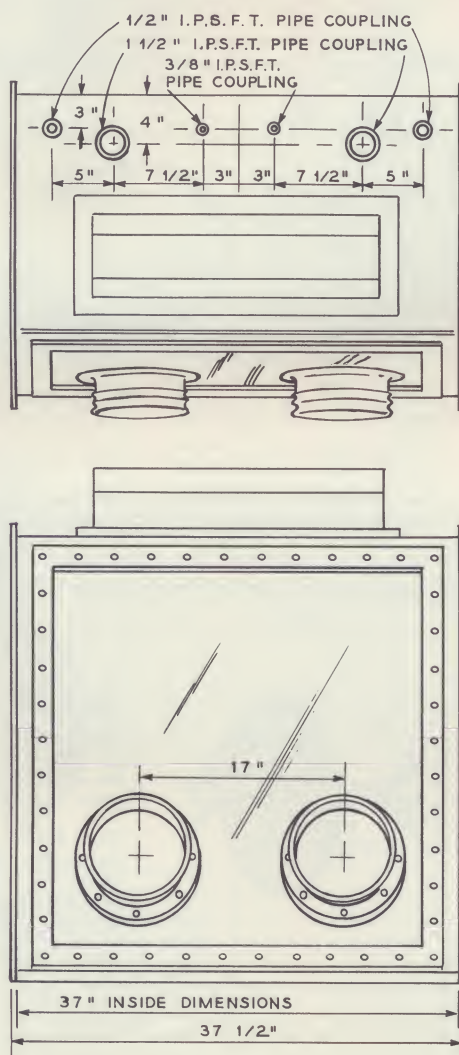
If the leak rate test is not specified, leakage will not exceed a drop in pressure from 2" to 1" water gauge pressure over a 2 hour period under constant conditions.

Full-View Sloping Front Enclosures are designed to provide virtually a 100% view of the box interior, as well as a 36" inside working height. 8" I.D. glove ports mounted in the viewing panel afford the user maximum accessibility to most areas of the box interior. If desired, additional glove ports can be added above the standard location for easier access to the upper portion of the enclosure. The enclosures are modular, with all parts interchangeable, and they can be joined together to make up multiple assemblies. Six female thread pipe couplings are provided at the top of the boxes for entrance or attachment of filters, electrical services and plumbing services. These are two 1½" I.P.S. couplings for filters, two ½" I.P.S. couplings for electric fixtures and two ¾" I.P.S. couplings for plumbing services. An externally located 2-tube fluorescent light fixture (bulbs not included), which is sealed from the box interior, is also provided.

Full-View Sloping Front Enclosures are especially recommended for extremely dry atmospheres, very hazardous radiochemical usage and other highly critical applications. Specially designed gaskets seal the enclosures so effectively that they are freon tight at 6" water pressure when all openings are closed.



**No. 2C2010 FULL-VIEW
SLOPING FRONT ENCLOSURE**



INTERCHANGEABLE OR REPLACEMENT PARTS

- 1 pr.—No. 2C1465 Neoprene Gloves (Size 9¾)
- 2 —No. 2C1536 Glove Port Clamps
- 2 —No. 2C2100 Plain End Panels
- 1 —No. 2C2250 Plexiglas Viewing Panel

